

Appl. No. 10/660,186
Amdt. dated February 8, 2007
Reply to Office Action of November 9, 2006

Docket No. A01477

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REMARKS/ARGUMENTS

Claims 1-6 and 11-24 remain in this application. Claims 7-10 are cancelled without prejudice. Claim 21-24 are new.

Lack of New Matter in Amendments:

New claim 21 finds support in the present specification on p. 11, lines 6-8. New claims 22-24 find support in the present specification on p. 12, lines 1-10.

Response to rejection of claims 1-6 and 11-20 over Irie

In the above-identified Office Action the Examiner rejected claims 1-6 and 11-20 under 35 USC §103(a) as being obvious over US 5,959,028 (Irie).

Applicants respectfully traverse the rejection. Applicants submit that Irie fails to teach or suggest compositions with all the limitations of the present claims. For example, Applicants submit that Irie fails to teach or suggest compositions with 5% or less non-reactive volatile compounds. For another example, Irie fails to teach or suggest compositions with an anion of a Michael donor. Thus, Irie fails to teach or suggest compositions that contain both an anion of a Michael donor and a low level (5% or less) of non-reactive volatile comounds.

Regarding the limitation of 5% or less non-reactive volatile compounds:

As Applicants have presented in greater detail in previous papers regarding the present application, Irie teaches compositions suitable for Michael reaction that are dissolved or dispersed in a volatile, non-reactive substance (see Irie, col. 2, lines 10-15 and col. 6, lines 19-21). Applicants submit that it is well known that, in order for a composition to have ingredients that are "dissolved or dispersed" in a solvent, as in Irie's invention, the amount of solvent in the composition must be much more than 5% by weight of the composition.

Irie's Examples illustrate this generalization. As Appplicants have presented in greater detail in previous papers regarding the present application, Irie's Example 1 has non-reactive volatile content of 43%, and Irie's Examples 2-30 are similar.

In previous papers regarding the present application, Applicants and Examiner have discussed Irie's Example 31.

In Irie's Example 31, the ingredients listed in the table at col. 12, lines 52-64 are taught by Irie to be a "base coat composition." Applicant submits that Irie does not teach or suggest that the "base coat composition" is an example of Irie's invention. The ingredients of Irie's "base coat composition" are aluminum flake, acrylic varnish, two melamine resins, and isopropyl alcohol. None of these materials is a Michael donor. Therefore, Applicants submit that the "base coat composition" disclosed in Irie's Example 31 does not teach or suggest a composition containing a multi-functional Michael donor, and therefore Irie's teaching regarding the "base coat composition" in Irie's Example 31 does not teach or suggest the composition recited in the present claims.

In the remainder of Example 31, Irie teaches, "Then, the solution of Example 1 adjusted to Ford cup #4 viscosity of 30 seconds was applied electrostatically onto the base coat film wet-on-wet." As set forth in a previous paper (September 28, 2007), Applicants submit that such an "adjusted" solution will have at least the original volatile content of Example 1, which was 43%.

In sum, whenever Irie teaches a composition of Irie's invention (i.e., a composition containing Irie's ingredients (a), (b), and (c)), that composition as taught by Irie has volatile content of approximately 43% or higher.

In contrast, the compositions recited in the present claims have non-reactive volatile content of 5% or less. Applicants submit that Irie provides no teaching or suggestion toward the use of Michael curing compositions with such low levels of non-reactive volatile compounds.

The Examiner argued in the above-identified Office Action that it would have been obvious to a person of ordinary skill in the art to use the amount of volatile compound recited in the present claims "because it is well known that the less amount of volatile organic compound is in the composition, the more tendency of liquid material to pass into the vapor state, which is highly desirable for coatings, adhesives, etc."

If Applicants understand the Examiner's argument correctly, the Examiner seems to be arguing that a person of ordinary skill in the art finds lower amounts of volatiles

generally desirable, and that this general desire would lead such a person to reduce the level of solvent disclosed by Irie from Irie's levels (approximately 43%) to those of the present claims (5% or less).

Applicants respectfully disagree with this argument. Irie's teachings are limited to compositions in which the ingredients are "dissolved or dispersed" in solvent. It is well known that compositions that have active materials "dissolved or dispersed" in solvent have amounts of solvent much higher than 5%. Thus, Applicants submit that a person of ordinary skill in the art would not find it obvious, if such a person did have a general desire to reduce the amount of solvent and was familiar with Irie's teaching, to create a composition of the present claims.

Regarding the anion of a Michael donor:

In Irie's discussion of catalysts for use with Michael addition reactions (col. 4, line 21 through col. 5, line 26), Irie does not teach or suggest the use of an anion of a Michael donor as catalyst for Michael addition. Applicants note that the anion of a Michael donor is described in the present specification (p. 11, lines 4-6) as thought to be capable of acting as catalyst for Michael addition. Consequently, Applicants submit that the present claims are non-obvious over Irie because of the presence of an anion of a Michael donor in the the composition of the present claims.

Regarding the combination of features:

Applicants submit that, in addition to the above arguments, it is also true that Irie fails to teach or suggest the combination of features recited in the present claims. Applicants submit that, for example, Irie does not teach or suggest compositions that have both an anion of a Michael donor and a low level of non-reactive volatile compounds. Applicants note that the present specification teaches one illustrative method of achieving such a combination. The present specification teaches (p. 11, lines 16-18) one method of creating a composition with this combination of features; that is, by using an anion of a Michael donor as a catalyst, the amount of solvent that would

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normally be required by the presence of a previously known catalyst (such as metal alkoxide) can be eliminated from the formulation.

In sum, the present claims recite a new combination of features (presence of an anion of a Michael donor and presence of 5% or less non-reactive volatile compounds), and the present specification teaches one method for creating such a combination of features.

Applicants note that a general desire on the part of a person of ordinary skill in the art to reduce volatile components does not constitute a motivation or suggestion to adopt all of the features of the present claims. For example, such a general desire does not suggest the use of an anion of a Michael donor in combination with a low level of non-reactive volatile compounds.

Summary regarding all the present claims:

Compositions taught by Irie have ingredients "dissolved or dispersed" in solvent and have approximately 43% of volatile, non-reactive compounds. Applicants submit that Irie's teachings, even if viewed in light of a general desire to reduce the level of volatile compounds, do not provide any teaching or suggestion for compositions with all the features of the present claims (including, for example, anion of Michael Donor and low level of non-reactive volatile compounds). Therefore, Applicants submit that the present claims are non-obvious over Irie.

Claim 13

Applicants submit that the above arguments are sufficient to establish the non-obviousness of present claim 13 over Irie, because present claim 13 is dependent on present claim 1. Applicants submit that the features recited in present claim 13 provide an additional reason why present claim 13 is non-obvious over Irie.

The Michael donor taught by Irie is "an acrylate polymer containing a plurality of malonate-terminated pendant groups in the molecule" (col. 2, lines 12-13).

In contrast, the Michael donor recited in present claim 13 is different from the Michael donor taught by Irie. The Michael donor recited in present claim 13 is either (i) or (ii) as follows:

- (i) a polyhydric alcohol linked to an acetoacetate group; thus, Michael donor (i) is not an acrylate polymer;
- or
- (ii) a compound with a Michael donor functional group selected from a closed list that does not include the malonate group; thus, Michael donor (ii) does not have malonate groups.

Neither of the Michael donors recited in present claim 13 is within the class of Michael donors taught by Irie, and Applicants submit that Irie does not teach or suggest the use of other types of Michael donors. Therefore, Applicants submit that the Michael donor feature provides an additional reason why present claim 13 is non-obvious over Irie.

Claim 15

Applicants submit that the above arguments are sufficient to establish the non-obviousness of present claim 15 over Irie, because present claim 15 is dependent on present claim 1. Applicants submit that the features recited in present claim 15 provide an additional reason why present claim 15 is non-obvious over Irie.

The Michael donor taught by Irie is "an acrylate polymer containing a plurality of malonate-terminated pendant groups in the molecule" (col. 2, lines 12-13).

In contrast, the Michael donor recited in present claim 15 is different from the Michael donor taught by Irie. The Michael donor recited in present claim 15 is a polyhydric alcohol and therefore is not an acrylate polymer. Applicants submit that Irie does not teach or suggest the use of Michael donors that are not acrylate polymers. Therefore, Applicants submit that the Michael donor feature provides an additional reason why present claim 15 is non-obvious over Irie.

Claim 16

Applicants submit that the above arguments are sufficient to establish the non-obviousness of present claim 16 over Irie, because present claim 16 is dependent on present claim 1. Applicants submit that the features recited in present claim 16 provide an additional reason why present claim 16 is non-obvious over Irie.

Irie teaches that a variety of strong base compounds can be used as Michael catalysts in Irie's invention (col. 4, lines 21 to 43). Irie makes no teaching or suggestion that any of these strong base compounds could be specifically excluded from the composition. In contrast, present claim 16 recites compositions in which several common strong base compounds are excluded. Therefore, Applicants submit that the exclusion of the listed strong base compounds provides an additional reason why present claim 15 is non-obvious over Irie.

Claim 21

Applicants submit that the above arguments are sufficient to establish the non-obviousness of new claim 21 over Irie, because new claim 21 is dependent on present claim 1. Applicants submit that the features recited in new claim 21 provide an additional reason why new claim 21 is non-obvious over Irie.

Irie teaches the use of well known strong bases to catalyze the Michael reaction (col. 4, lines 21-24). Irie discloses a variety of such bases (col. 4, line 25 to col. 5, line 26). In the descriptions of Michael catalysts, Irie does not teach or suggest the inclusion of an anion of a Michael donor and the exclusion of the usual Michael catalysts. Therefore Applicants submit that the recitation of catalyst in new claim 21 provides an additional reason for the non-obviousness of new claim 21 over Irie.

Claims 22-24

Applicants submit that the above arguments are sufficient to establish the non-obviousness of new claims 22-24 over Irie, because new claims 22-24 are dependent on present claim 1. Applicants submit that the features recited in new claims 22-24 provide an additional reason why new claims 22-24 are non-obvious over Irie.

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Irie teaches the use of substantial amounts of solvent, as set forth herein above. The low amounts of solvent recited in new claims 22-24 provide even greater distinction between the present claims and the teachings of Irie than is provided by present claim 1. Thus the amount of solvent provides an additional reason why each of new claims 22-24 is non-obvious over Irie.

Conclusion

In view of the foregoing amendments and arguments, Applicants respectfully request the Examiner to reexamine the claimed subject matter, to withdraw the rejections of the claimed subject matter and to allow claims 1-6 and 11-24 at this time. If, however, there remain any open issues which the Examiner believes can be resolved by a telephone call, the Examiner is cordially invited to contact the undersigned agent.

No fees are believed to be due in connection with the submission of this amendment; however, if any such fees, including petition or extension fees, are due, the Commissioner is hereby authorized to charge them, as well as to credit any overpayments, to Deposit Account No. 18-1850..

Respectfully Submitted,

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